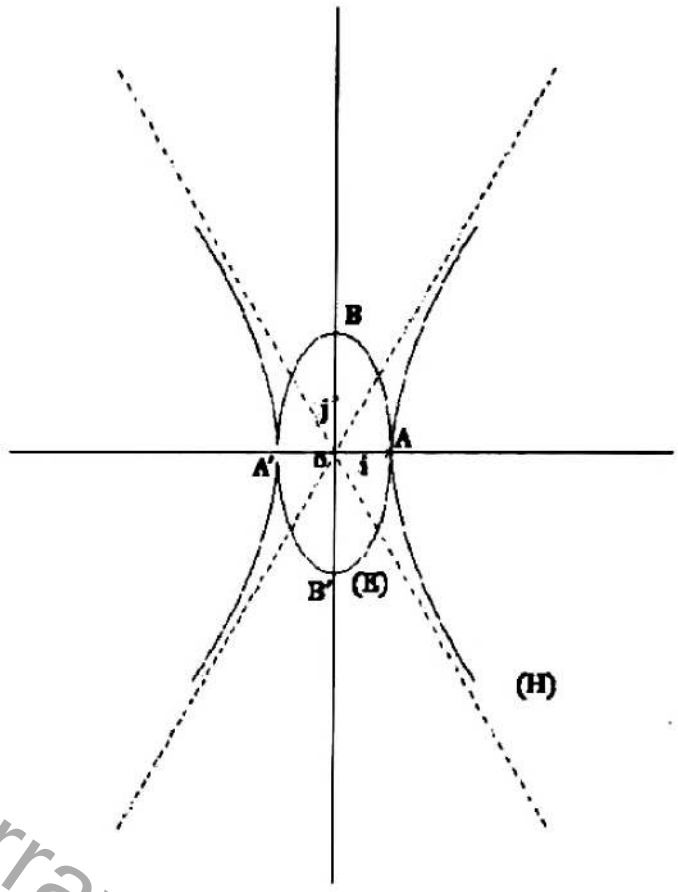

Exercice 24

$(\mathcal{C}_m): mx^2 + (1+m^2)y^2 - 2my = 0$

$(\mathcal{C}_m): mx^2 + (1+m^2)\left(y - \frac{m}{1+m^2}\right)^2 = \frac{m^2}{1+m^2}$

1^er cas : $m = 0$ $\quad (\mathcal{C}_0): y = 0$ droite

2ème cas : $m \neq 0$ $\quad (\mathcal{C}_m): \frac{x^2}{\left(\frac{m}{1+m^2}\right)} + \frac{\left(y - \frac{m}{1+m^2}\right)^2}{\frac{m^2}{1+m^2}} = 1$

$\frac{m}{1+m^2} = \frac{m^2}{1+m^2} \Leftrightarrow m = 1$

1. pour m=1 ➔ $(\mathcal{C}_1)$ est un cercle
2. m<0 ➔ $(\mathcal{C}_m)$: hyperbole
3. m>0 et m≠1 ➔ $(\mathcal{C}_m)$ est une ellipse

Qarray.tn -Aqra Blech- Qarray.tn